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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/075,120	02/13/2002	Clive Pai	6370	7283

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EXAMINER

MARMOR II, CHARLES ALAN

ART UNIT

PAPER NUMBER

3736

DATE MAILED: 03/23/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/075,120	PAI ET AL. <i>[Signature]</i>
	Examiner Charles A. Marmor, II	Art Unit 3736

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on _____.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) 9-13 is/are allowed.
- 6) Claim(s) 1,2,4-8 and 14-16 is/are rejected.
- 7) Claim(s) 3 and 17-22 is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>5</u> . | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement filed March 10, 2003 is filed in accordance with 37 CFR 1.98(c). Copies of publications 18-70 listed on the PTO/SB/08 have not been submitted, and Applicant has provided a statement that these publications are cumulative. Publications 18-70 have been initialed as being considered on the PTO/SB/08 in view of Applicant's statement that these publications are cumulative, in accordance with 37 CFR 1.98(c); however, these references have not been reviewed by the Examiner.

Specification

2. The disclosure is objected to because of the following informalities: On page 12, lines 8 and 9, "18" apparently should read --16--. Appropriate correction is required.

3. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Objections

4. Claim 14 is objected to because of the following informalities: in line 5, "with" apparently should read --within--. Appropriate correction is required.

5. Claim 18 is objected to because of the following informalities:
 - a. In line 1, "the system of claim 14" apparently should read --a system for determining thoracolumbar position in the sagittal plane--. The limitation "the system of claim 14" is redundant as all of the limitations of claim 14 are repeated in the "providing" step of the method of claim 18.
 - b. In line 5, "with" apparently should read --within--.
Appropriate correction is required.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
7. Claims 5, 6 and 15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 5, it is unclear what positions the limitation "said positions" in line 1 is intended to refer to. The limitation "said positions" could potentially refer to any or all of the "plurality of flexion positions" recited in line 3 of claim 1, the one selected flexion position recited in line 4 of claim 1, or the "reposition" recited in line 6 of claim 1.

Claim 6 recites the limitation "said recordations" in line 2. There is insufficient antecedent basis for this limitation in the claim. There is only one recording recited in the claims prior to this recitation.

Claim 15 recites the limitation "said housing component" in line 1. There is insufficient antecedent basis for this limitation in the claim. There is no housing component recited in claims 9, 13 or 15 prior to this recitation.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1, 4 and 6-8 are rejected under 35 U.S.C. 102(b) as being anticipated by Maffey-Ward et al. (1996). Maffey-Ward et al. teach a clinical test of lumbar spine kinesthesia and spinal reposition sense. The method includes providing an asymptomatic test subject engaged in a thoracolumbar movement including a plurality of flexion positions within a range of motion through the sagittal plane. An initial start position is selected from the flexion positions and the position and orientation of the initial position is recorded using an electromagnetic device. The electromagnetic device measures the position and orientation of points in space in three dimensions; therefore, the measured positions will have at least a vertical coordinate and a horizontal coordinate. A subject flexion position and a subject recovery position (reposition) are also recorded. The reposition is sensed by the subject, responsive to the selected initial position. The subject flexion position and a subject recovery position (reposition) also will have at least a vertical coordinate and a horizontal coordinate. The reposition and the selected initial position are then compared to measure the subject's reposition sense. The recorded reposition can

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include an average of reposition recordings. The test subject wears minimal clothing in order to minimize cutaneous input and is blindfolded in order to minimize visual input during the test.

10. Claims 1, 2, 4-6 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Swinkels et al. (2000). Swinkels et al. teach a clinical test of spinal position sense. The method includes providing an asymptomatic test subject engaged in a thoracolumbar movement including a plurality of flexion positions within a range of motion through the sagittal plane. An initial start position is selected from the flexion positions and the position and orientation of the initial position is recorded using an electromagnetic device. The electromagnetic device measures the position and orientation of points in space in three dimensions; therefore, the measured positions will have at least a vertical coordinate and a horizontal coordinate. A subject flexion position and a subject recovery position (reposition) are also recorded. The reposition is sensed by the subject, responsive to the selected initial position. The subject flexion position and a subject recovery position (reposition) also will have at least a vertical coordinate and a horizontal coordinate. The reposition and the selected initial position are then compared to measure the subject's reposition sense. The selected position and the reposition are measured at the T1 process, which is in the range of C7-T4. The positions are selected from the group consisting of full flexion range of motion, one-third flexion range of motion, and two-thirds flexion range of motion. The recorded reposition can include an average of reposition recordings. The test subject is blindfolded in order to minimize visual input during the test.

11. Claims 14-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Badelon ('152). Badelon teaches a measuring frame for investigating spinal column mobility and for recording positions of the spinal column associated with prescribed body positions. The frame includes a vertical reference component 2 positioned perpendicular to a horizontal reference component 43 with a reference housing component 41, and a substantially level seating component 1 supporting the vertical reference component 2. The housing component 41 includes an aperture therethrough for receiving the horizontal reference component. The seat component 1 includes a substantially vertical member 4 a distance apart from the vertical reference component 2.

Allowable Subject Matter

12. Claims 3 and 17-22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

13. Claims 9-13 are allowable over the prior art of record.

14. The following is a statement of reasons for the indication of allowable subject matter:
Regarding claim 3, no prior art of record teach or fairly suggest a method of assessing spinal reposition sense, as claimed by Applicant, where the horizontal coordinates of the selected flexion position and the recorded reposition are measured at the T4 spinal process.

Regarding claims 9-13, no prior art of record teach or fairly suggest a method of using linear coordinates to determine the angle of thoracolumbar flexion in the sagittal plane, where

the subject is seated on a level seating surface, vertical linear coordinates and horizontal linear coordinates relative to a provided vertical reference are measured at C7-T4 on the subject, and the angle of flexion of the thoracolumbar spine is trigonometrically determined using the measured linear coordinates.

Regarding claim 17, no prior art of record teach or fairly suggest a thoracolumbar position determining system, as claimed by Applicant, where a leveling device is provided on the horizontal reference component.

Regarding claims 18-22, no prior art of record teach or fairly suggest a method of using a thoracolumbar measurement system having a vertical reference component positioned perpendicular to a horizontal reference component within a reference housing component, and a level seating component supporting the vertical reference component, to clinically assess the spinal reposition sense of a test subject.

Conclusion

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Sastre ('305) teaches an apparatus for physiotherapy in deviations of the human spinal cord. Petragallo ('658) teaches a compact human range of motion measurement system. Riley et al. ('082) teaches a method and apparatus for measurement of points on the human body. Brown ('449) teaches a system and method for assessing limb position sense during movement. DelRe ('835) teaches a method and apparatus for testing a spine. Hanson ('121) teaches a range of motion instrument for the spine. Greenawalt ('079) teaches an adjustable chiropractic diagnostic apparatus.

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles A. Marmor, II whose telephone number is (703) 305-3521. The examiner can normally be reached on M-TH (7:00-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mary Beth Jones can be reached on (703) 308-3400. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Charles A. Marmor, II
Primary Examiner
Art Unit 3736

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March 17, 2004